

WHAT IS CLAIMED IS:

1. A method of printing an image utilizing a printer having print nonuniformities, the method comprising the steps of:

5        converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

          defining each pixel as either a background pixel, interior pixel, or an edge pixel;  
and,

          reassigning the digital value of one or more edge pixels or interior pixels  
10        independently, thereby altering the appearance of the image when printed in order to compensate for printer nonuniformities.

2. A method in accordance with claim 1, further comprising classifying edge  
pixels by direction and reassigning the digital value of the edge pixels as a function of  
15        direction.

3. A method in accordance with claim 1, wherein the converting step comprises  
converting the image to a binary digital bitmap and the reassigning step comprises  
reassigning the binary digital values to multi-bit digital values.

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4. A method in accordance with claim 1, wherein the converting step comprises  
converting the image to a multi-bit digital bitmap and the reassigning step comprises  
reassigning the binary digital values to multi-bit digital values.

5. A method in accordance with claim 1, wherein the reassigning step comprises increasing the value of edge pixels with respect to interior pixels.

5           6. A method in accordance with claim 1, wherein the reassigning step comprises decreasing the value of edge pixels with respect to interior pixels.

7. A method in accordance with claim 1, further comprising performing the defining and reassigning steps two or more times.

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8. A method in accordance with claim 1, wherein the reassigning step comprises reassigning multiple interior pixel values.

9. A method of printing an image comprising the steps of:

15           converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

          defining each pixel as a background pixel, interior pixel, edge pixel, one line pixel, or two line pixel; and,

          reassigning the digital value of one or more interior pixel, edge pixel, one line  
20 pixel, or two line pixels independently, thereby altering the appearance of the image when printed in order to compensate for printer nonuniformities.

10. A method in accordance with claim 9, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

5           11. A method in accordance with claim 9, wherein the converting step comprises converting the image to a binary digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

10           12. A method in accordance with claim 9, wherein the converting step comprises converting the image to a multi-bit digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

15           13. A method in accordance with claim 9, wherein the reassigning step comprises increasing the value of edge pixels with respect to interior pixels.

            14. A method in accordance with claim 9, wherein the reassigning step comprises decreasing the value of edge pixels with respect to interior pixels.

20           15. A method in accordance with claim 9, further comprising performing the defining and reassigning steps two or more times.

            16. A method of printing an image utilizing a printer having print nonuniformities, the method comprising the steps of:

identifying the printer print nonuniformities;

converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

defining each pixel as either a background pixel, interior pixel, or an edge pixel;  
5 and,

reassigning the digital value of one or more edge pixels or interior pixels independently, thereby altering the appearance of the image when printed in order to compensate for the printer nonuniformities.

10 17. A method in accordance with claim 16, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

15 18. A method in accordance with claim 16, wherein the reassigning step comprises reassigning multiple interior pixel values.

19. An apparatus for altering the appearance of an image printed on a printer having print nonuniformities, the printer utilizing input digital image data comprised of an array of pixels and wherein each pixel is assigned a digital value representing marking  
20 information, the apparatus comprising a rendering circuit for defining each pixel as either a background pixel, interior pixel, or an edge pixel; and reassigning the digital value of one or more of the edge pixels or interior pixels independently in order to compensate for the printer nonuniformities.

20. An apparatus in accordance with claim 19, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

5           21. An apparatus in accordance with claim 19, wherein the digital image data is binary.

22. An apparatus in accordance with claim 19, wherein the digital image data is a multi-bit.

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23. An apparatus in accordance with claim 19, wherein reassigning comprises increasing the value of edge pixels with respect to interior pixels.

24. An apparatus in accordance with claim 19, wherein reassigning step  
15 comprises decreasing the value of edge pixels with respect to interior pixels.

25. An apparatus in accordance with claim 19, wherein the rendering circuit further comprises performing the defining and reassigning steps two or more times.

20           26. An apparatus in accordance with claim 19, wherein reassigning comprises reassigning multiple interior pixel values.

27. An apparatus for altering the appearance of an input digital image when printed utilizing a printer having print nonuniformities comprising:

5 a raster image processor for converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

a rendering circuit for defining each pixel as either a background pixel, interior pixel, or an edge pixel; and, reassigning the digital value of one or more edge pixels or interior pixels independently in order to compensate for the print nonuniformities.

10 28. An apparatus in accordance with claim 27, further comprising classifying edge pixels by direction and reassigning the digital value of the edge pixels as a function of direction.

15 29. An apparatus in accordance with claim 27, wherein converting comprises converting the image to a binary digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

20 30. An apparatus in accordance with claim 27, wherein converting comprises converting the image to a multi-bit digital bitmap and reassigning comprises reassigning the binary digital values to multi-bit digital values.

31. An apparatus in accordance with claim 27, wherein reassigning comprises increasing the value of edge pixels with respect to interior pixels.

32. An apparatus in accordance with claim 27, wherein reassigning comprises decreasing the value of edge pixels with respect to interior pixels.

33. An apparatus in accordance with claim 27, wherein the rendering circuit  
5 performs performing the defining and reassigning two or more times.

34. An apparatus in accordance with claim 27, wherein reassigning comprises reassigning multiple interior pixel values.

10 35. A method of printing an image utilizing a printer having print nonuniformities, the method comprising the steps of:

converting the image into a digital bitmap comprised of an array of pixels wherein each pixel is assigned a digital value representing marking information;

defining each pixel as either a background pixel, interior pixel, or an edge pixel;

15 classifying edge pixels by direction; and,

reassigning the digital value of one or more edge pixels as a function of direction.

36. A method in accordance with claim 35, wherein the converting step comprises converting the image to a binary digital bitmap and the reassigning step comprises  
20 reassigning the binary digital values to multi-bit digital values.

37. A method in accordance with claim 35, wherein the converting step comprises converting the image to a multi-bit digital bitmap and the reassigning step comprises reassigning the binary digital values to multi-bit digital values.

5           38. A method in accordance with claim 35, wherein the reassigning step comprises increasing the value of edge pixels with respect to interior pixels.

39. A method in accordance with claim 35, wherein the reassigning step comprises decreasing the value of edge pixels with respect to interior pixels.

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40. A method in accordance with claim 35, further comprising performing the defining and reassigning steps two or more times.

15           41. A method in accordance with claim 35, wherein the reassigning step comprises reassigning multiple interior pixel values.